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ABSTRACT

A project designed to gather information about similarities and differences that may be important for teaching English to Finnish learners, and, to a certain extent, for teaching Finnish through English, was conducted through a systematic comparison of the two languages and an analysis of instances where the two languages come into contact. In the early stages of the project the major emphasis of the grammatical studies has been on contrasting grammatical surface structures in the two languages on the basis of translation equivalence. In addition to contrastive analyses, the project has also included error analysis, textbook analysis, and the study of certain aspects of language acquisition. Early phonological studies of the project have been different from the traditional framework of contrastive analysis. More recently, traditional contrastive analysis has been expanded to include contrastive discourse analysis. In this phase, the language user's communicative competence as a whole is the object of study, and attention is paid to all linguistic, psychological, and sociological parameters that are involved in the communication process. Theoretical considerations are addressed in the analysis. (SW)

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THE FINNISH-ENGLISH CONTRASTIVE PROJECT: STATUS AND PROGRESS REPORT

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The Finnish-English Contrastive Project was launched at the Department of English, University of Jyväskylä, in the spring of 1974. Through a systematic comparison of the two languages and an observation and analysis of instances where the two languages come into contact, the project aims at gathering information about similarities and differences which may be of importance for teaching English to Finnish learners and, to a certain extent, for teaching Finnish through English. The project is being carried out in two sections: The Department of Phonetics and Linguistics at the Institute of Finnish Language and Communication is responsible for the work on problems of pronunciation and participates in the work on various aspects of spoken language and discourse analysis, while the Department of English is mainly concerned with the other aspects of the research.

THEORETICAL CONSIDERATIONS

Certain aspects of the theoretical background are discussed elsewhere by Sajavaara (1977) and Lehtonen (1977).[1] In the early stages of the work, most research has concentrated on topics resembling those taken up by earlier contrastive analyses and thus the main emphasis has been on a rather abstract structural analysis. In addition to contrastive analyses, the project has also included error analysis, textbook analysis, and the study of certain aspects of language acquisition. More recently, traditional contrastive analysis has been expanded to the area which we call contrastive discourse analysis. An abstract grammatical or structural contrasting of the two languages is highly insufficient to map out the problems which a foreign language learner is faced with. The main target of CA for pedagogical purposes should be what takes place in a 'bilingual' speaker when he is using L2 as compared to his use of L1.

In the literature dealing with problems of language learning, CA is all too often associated with structural linguistics and the behaviorist

[1] See also Sajavaara 1976a, 1976b.

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theories of language learning; there is no reason for this, despite the fact that early CA was highly influenced by them. It also seems that too much has been made out of the predictive nature of CA, and even today it is possible to find statements in the literature that purport to deny the 'strong' hypothesis of CA (meaning that CA can predict all language learning problems; see Wardhaugh 1970) despite the fact that such a 'strong' hypothesis was never explicitly formulated by contrastive linguists and there is no evidence for such statements except in some critical reviews of CA.

In the last few years a large body of literature has materialized with the purpose of showing that a child learns a second language more or less the same way as he learns the first language and that there are no major differences between learners of English whether they approach English as an L1 or an L2, which also implies that this process is practically free from any influence from the L2 learners' respective mother tongues (for summaries of research, see, eg., Hatch 1977 and Hakuta and Cancino 1977). Most of this research is, however, concerned with learners who are acquiring a second language by being exposed to it in natural language use situations in an L2 setting without any, or only a minimal amount of, formal teaching. A foreign language learner is seldom exposed to the new language to the extent that he can rely on natural acquisition, and although it may be misleading to make a distinction between second and foreign language learning (in both cases the end product should be the same, ie. the verbalized form of a second code), this distinction is relevant as an indicator of the differences in the settings in which the new language is learned: a second language in the L2 setting mainly through natural exposure to the language; a foreign language in an L1 setting mainly through formal teaching in the classroom. The different settings result in obvious differences in the input and this again may cause differences in the language functions available to the emerging bilingual speaker.

Most of traditional CA has been too abstract and too simplified to give even a vague idea of what takes place in a foreign language speaker when he makes an attempt to use L2 as a medium of communication. The psycholinguistic contrast takes place in the mind of the language learner, and for this the whole interaction between a Finnish speaker of English and a non-Finnish (not necessarily native) speaker of English has to be studied with particular reference to factors which make it possible for

a Finn to understand messages in contexts where the language code is English, and to make himself understood. An important part of this research consists of attempts to discover those factors which characterize a Finnish speaker of English as against, eg., a German speaker of English (see Sajavaara and Lehtonen 1978). Such research is possible only by a careful and detailed comparison of Finnish and native English speech, on the one hand, and of communicative and language behaviour in Finnish and English by the same Finnish informants, on the other (see Sajavaara 1977: 24-25 and Lehtonen, Sajavaara and Korpimies 1978). Due attention should be paid to variation in Finnish and English, on the one hand, and variation between Finns as users of the two languages and as language learners, on the other.

Further research under the auspices of the Finnish-English Contrastive Project will be carried out with close correlation to recent and current work on second/foreign language learning/acquisition and learning strategies with special emphasis on the Monitor theory as developed by Stephen Krashen (see Krashen 1977), the theories of simplification (Widdowson 1977) and complication (Corder 1977), as well as other studies concerned with what has come to be termed, perhaps misleadingly, as interlanguage. Special emphasis will be placed on the communicative function of language and on the role played within it by different parameters. Most recent research on second language acquisition presents an appealingly uniform picture about the acquisition sequence of a certain set of English morphemes. Yet it is evident that when children acquire a language it is not morphemes that they acquire but a means of giving expression to their needs and ideas, which is also reflected by the fact that parents pay attention to their children's ideas and their correctness and not to their grammar. There is also evidence that successful language acquirers are often more concerned with communication than with form (see, eg., Fillmore 1977). Overemphasis on the morpheme acquisition sequence may also be misleading for the reason that the sequence is related to the frequency of input (Larsen-Freeman 1976), and most of the 'late' morphemes happen to be such 'easy' morphemes as the ending of the third person singular, with the most obvious reason for them remaining unacquired being the learner's unconscious attempt to reduce the load on the language processing mechanism whenever this reduction can be effected at the cost of the natural redundancy of the language (see Frith 1977: 114). Morpheme sequence studies will have to be supplemented by research based on discourse entities and by research where the articles, for

instance, are not simply lumped together but where the functions of the definite article, the indefinite article, and the zero-article are separated (see also Frith 1977: 120-121), or those of the progressive are considered individually. This kind of detailed research may also reveal different kind of relationships between L1 and L2.

Cross-sectional acquisition studies easily hide individual variation between language learners, as is shown by Tarone et al. (1976), Andersen (1977a, 1977b) and Fillmore (1977). When Andersen, for instance, developed a method to study the performance of individuals in producing data for morpheme sequence studies, which he calls implicational analysis (Andersen 1977b), he discovered that in individual data a great deal of L1 influence could be detected which was disguised by a cross-sectional analysis. Krashen's work on the Monitor, which has been concerned with adult second language acquisition, provides an interesting starting-point for research on variation along the age parameter.

Both L1 and L2 are mostly seen as monolithic entities without due attention being paid to geographical, social and other variations in them. The study of the interaction of the two codes when used by a bilingual speaker in discourse is necessary, to reveal the effects of the variation and to complete the picture of language contrasts.

PRESENT STATE OF THE PROJECT

The research programme has been divided into subsidiary projects, which are being carried out by individual research workers, in most cases for an academic degree. Their progress is therefore dependent on the individual study schedules of the students, which means, in practice, that the results of the overall project cannot always be summarized in the order which would be the most convenient for the progress of the programme as a whole. The extent of the contrastive analysis framework for pedagogical purposes makes it necessary, however, to make use of the research for theses and dissertation at the undergraduate and graduate levels. Moreover, the importance of this kind of a programme in motivating the students to become interested in research activities cannot be overemphasized.

Only a small proportion of the research which has been undertaken so far has reached the reporting stage. As always, a research programme on this scale also brings up new problems which require investigation. Within a comprehensive research programme it is easier to channel research

resources into areas of knowledge which supplement information previously acquired. A wider programme is mostly also more efficient for collecting material, tapes, tests, experimental analyses, and experience to be shared between the participants. One of the first tasks carried out by the project was the collection and processing of the material for a new bibliography of contrastive analysis; the 1,000-title bibliography was published as the first volume of Jyväskylä Contrastive Studies, a reports series of the project (Sajavaara and Lehtonen (eds.) 1975). The bibliography covers the period since 1965, which is the year of the previous comprehensive bibliography (Hammer and Rice (eds.) 1965).

Most of the objectives of the Jyväskylä project can be considered to be applied because most topics undertaken so far relate to some problems of language acquisition, language teaching, or language testing. At the same time, however, contrasting the two languages also brings up new information about language and speech communication.

Grammatical and related studies. - In the early stages of the Jyväskylä project the major emphasis of the grammatical studies has been laid on the contrasting of grammatical surface structures in the two languages on the basis of translation equivalence observed by a bilingual informant. Advanced Finnish students of English have also been considered bilingual informants if authentic English material has been used. Two major approaches have been applied: a category in English grammar has been used as a starting point for the analysis of its Finnish equivalents, or a language-independent semantic category has been used to map the structural equivalents. In some cases, one and the same structural category in both languages has been used to provide material for correspondence and non-correspondence across the languages.

No strict constraints have been set upon the collection of materials for individual research tasks. The idea of a set corpus, as used by the Serbo-Croatian-English Contrastive Project for instance, was rejected at an early stage for economic reasons and for fear that such a corpus would restrict the flexibility of the analysis. Translations from English into Finnish, examples in English grammars and their Finnish translations, and material in discussions of specific points in English grammar have been used as sources for contrasts; sentences construed by the research workers have also been used to gain information about the influence of changes in

the sentences on their meaning and/or use (eg. Finnish *Hän on opettaja* *Hän on opettajana* 'He is a teacher'/'He is *working* as a teacher'). In many cases a corpus would provide such material only with difficulty, if at all. Although the idea of using one and the same corpus for all partial projects was rejected, the project has, however, collected a set of equivalent sentences from translations and by translating examples in two grammars of English (Quirk et al. 1972 and Sinclair 1972). A total of about 30,000 sentences has been made available to individual research workers. This material has not been consistently analysed, with the exception of a few hundred sentences which were analysed syntactically, semantically, and pragmatically for computer processing. The requirements of the project objectives resulted in such a complicated analysis that, under the auspices of the present project, it would have been impossible to go through a corpus of material which would be sufficiently large for consistent results, and the idea was rejected.

Most of the grammatical studies completed so far can be roughly categorized as structural. They start from a surface category of either of the two languages, in some cases from one and the same category in both, and semantic equivalence is considered within this structural category only. Such is the starting point in a study of the sentence structure of colloquial (written) English and a translation of such a text (Pöyhönen 1974). The study was of a preliminary nature and is used as a guideline for other studies. A similar preliminary study was one which mapped out the basic elements in noun phrases in the two languages (Manninen 1976). The concept of congruence as developed by Marton (1968) and Krzeszowski (1971) is necessary for this kind of analysis in addition to semantically defined equivalence. Structures in two languages are congruent if they have the same number of morphemes in the same order, eg. Finnish *tämä pieni poika*/ English *this little boy*. When a highly inflected language like Finnish is contrasted to English, it is required for two structures to be congruent, that the case and number suffixes are taken into account. The category of the article, which does not exist in standard Finnish, poses special problems; a strict application of the congruence concept requires a counterpart in the Finnish structure for an English article. Since adjectival modifiers are inflected in Finnish in congruence with the heads, the plurals of the above noun phrases *nämä pienet pojat*/*these little boys* are no longer congruent. Among the numerals, *yksi*/*one* is the only one that can occur in congruent structures because from *kaksi*/*two* the Finnish

numerals require a partitive singular: *kaksi poikaa* *two boys*. There exists a basic difference between Finnish and English noun phrases: in Finnish, premodification is preferred to postmodification, while in English it is vice versa and premodification is normally accepted only with certain modifiers or types of modifiers. In English, restrictive modifiers mostly follow the head; in Finnish, their place is regularly before the head: *miehen rakentama talo*/*the house built by the man*. The most common type of postmodification in Finnish is in form of a clause (relative, apposition or infinitive), but it can also be a noun in a case other than the nominative, corresponding, in most cases, to a prepositional modifier in English (*unelma antiikista*/*a dream of antiquity*). Rather complex premodifiers are accepted in Finnish in contrast to relatively simple ones in English (*sosiaalisista paineista vapaa taiteilija*/*an artist independent of social pressures*); the number of complex premodifiers is on the increase in English (mainly of the type *the take-it-or-leave-it principle*) and such English premodifiers do not correspond to premodifiers in Finnish in all instances. The study of the noun phrases shows that the number of formally congruent structures in Finnish and English is rather small. The small number of congruent structures does not, nowever, result in too great problems for a Finnish learner of English because the incongruence is mostly due to the complexity of the Finnish morphological system and the interdependence between members of the Finnish NP; an English learner of Finnish, for his part, will be faced with a great number of problems arising from the lack of congruence. The study of the basic elements of noun phrases was supplemented by a study of relative clauses in the two languages, which also indicates a number of differences in the acceptability of various modifier clusters in Finnish and English (Virnes 1976).

The copula-and-subject-complement constructions in Finnish and English have been studied by Hämäläinen (1975, 1977). The study also covers the syntactic surface elements which are classified as predicative adverbials in Finnish grammars (*Hän näyttää kauniilta* 'He looks beautiful'), because the predicate complement and the predicative adverbial are interrelated semantically. The distinction made by Finnish grammarians is purely formal and based on the statement that the cases of the predicate complement in Finnish are the nominative and the partitive. If the English article is disregarded, the only structures which are formally congruent with

the corresponding English structures are the ones in which the copula is *olla* 'to be' and the complement is a singular countable noun (*Mary is a nurse/Mary on sairaanhoitaja*) or an adjective referring to such a head (*Mary is beautiful/Mary on kaunis*). In the plural, the Finnish predicate complement is in the partitive, and if the complement is an adjective, it agrees with the subject in number (*He olivat enkeleitä/They were angels; Miehet olivat rikkaita/The men were rich*). The nominative vs. essive case difference between the complements in *Hän oli opettaja/Hän oli opettajana* reveals an interesting aspectual difference (*He is a teacher/He is working as a teacher*), which is also discussed by Markkanen (1976). The Finnish verb *tulla* 'become' is found with three structures: *Puuro tuli mustaa/Puurosta tuli mustaa/Puuro tuli mustaksi*; the first two seem to be interchangeable and mean that when the porridge was made it was black, while the third implies that after being made the porridge turned black (only the last structure is possible for *lumi/snow* for this reason). The verbs involving sense perception require cases other than the nominative or the partitive but otherwise the Finnish and English structures are similar (*Hän näytti kalpealta/He looked pale*); similar with the *pysyä/remain* structures implying continuity. Finnish often resorts to a reflexive verb instead of *tulla* and a complement (*vanheta/become old, kellastua/become yellow*).

The structural studies also include one on the English equivalents of the Finnish infinitive forms (Pitkänen 1974). Structural constraints in in the language of booktitles was studied by Vuohelainen (1976). The general aspects of sentence complexity in the two languages have also been discussed (Lehtinen 1976).

Karttunen's study of the English equivalents of the Finnish passive (Karttunen 1976, 1977) is no longer structural. The most striking features of the Finnish passive as against English are as follows: the Finnish passive is unipersonal; the passive sentences have no subject; the agent, which is always human, is unidentified and cannot normally be expressed in surface structure (if the English passive implies a non-human agent, such as in *The roof was blown away*, a passive cannot be used in Finnish and the agent has to be expressed, *Tuuli puhalsi talosta katon* 'The wind blew the roof off the house'); and intransitive verbs can have a passive form (*Talossa tanssittiin/It was danced in the house*). The Finnish passive is semantically very close to the indefinite/generic use

of the third person singular, which differs from the normal third person in that there is no surface subject (*Häntä luulee nuoremmaksi/Häntä luullaan nuoremmaksi* 'He is thought to be younger'). The majority of the problems that Finns have in using the English passive derive from these characteristics of the Finnish passive. In addition, the English passive has a textual function in topicalization (*Peter was killed by John/John killed Peter*); in Finnish, the passive is not needed (and could not be used) for this function because the flexibility of Finnish word order makes it possible to move the topicalized elements to the front position (see Hicks 1977). In Finnish, the passive is often used in sentences whose equivalents in English have subjects expressing instrument, location, or object (*Knuckles rapped on the door/Ovaen koputettiin rystysillä; The message said.../Sanomassa sanottiin...; This book sells well/Tätä kirjaa myydään hyvin*). The passive is also common in Finnish in expressions of events as against an active sentence in English (*Kokous pidettiin eilen/The meeting took place yesterday*).

Markkanen's study of time and aspect in Finnish and English (Markkanen 1976) is the most extensive subsidiary project so far. In both languages the tense is chosen primarily on the basis of the logical time of occurrence in relation to the present and the past. As regards past time, the major difference between the two languages is that in Finnish it is possible to use the perfect tense with a specific time reference pointing to a past time (*Nämä ovat tulleet eilen/These came yesterday*). The expressions for the future are the most complex as a whole, mainly because of the variety of structures possible in English. In English the perfective and imperfective aspects are often distinguished by the use of the simple tense or the *-ing* form of the verb; in Finnish, the imperfect aspect is often marked by the partitive case of the object (*Hän syö päivällistä/He is having dinner*). The nature of the subject, complementation, different kinds of expressions for time, quantity and measure affect the interpretation of the equivalent sentences in Finnish and English in different ways. The Finnish 'progressive' (*Hän on kirjoittamassa kirjettä* 'He is writing a letter') is mostly local (answering the question *Where is he?*).

A number of attempts have been made to map out the lexicons on the basis of the concept of the lexical field. The Finnish and English verbs for speaking correspond to each other syntactically and semantically in most cases (Korhonen 1977). Most verbs belonging to this category in the

two languages are non-factive, and the infrequent exceptions to this are also common to the two languages, which might be an indication of a fairly deep nature of factivity. The Finnish equivalents to verbs which can be interpreted both factively and non-factively in English are always given the non-factive reading in Finnish (eg. *announce, report, explain*). In Finnish the non-factivity of verbs is often marked by a translative argument (*Hän sanoi minua varkaaksi* 'He said that I was a thief') although there are exceptions (*Lääkäri totesi miehen kuolleeksi* 'The doctor pronounced the man dead'). The English accusativus cum infinitivo structure and its Finnish equivalent (with the infinitive in the illative case) both imply non-factivity (*I asked him to go home Pyysin häntä menemään kotiin*). The semantic field of vision (Pasanen 1977) can be divided into three parts in both languages: vision as a capacity, perception, and looking. For the capacity of vision both languages have only one verb *nähdä/see*, but in most cases the simple verb alone is not sufficient in English and it is supplemented by the auxiliary *can* (*En näe lukea/I cannot see to read*). The perception category includes one important difference; it is the lack of a lexical equivalent for *overlook*, which expresses a lack of preception. In Finnish there are a number of pseudo-reflexive verbs such as *näkyä, erottua*, and *hahmottua*; in English either a passive or a lexical equivalent is needed. English verbs of looking are mostly more specific than those in Finnish, whereas this field in Finnish is characterized by a large number of descriptive verbs (in many cases giving expression to the speaker's pejorative attitude). The verbs of vision in English seem to be more sensitive to the nature of the object, and occasionally to that of the subject, than their Finnish counterparts.

Most of the work in the field of error analysis has dealt with the kind of English which is used by Finnish university students of English. The areas which have been analysed so far are word order (Korhonen and Korhonen 1976), tenses and aspect (Brax and Ojanen 1976), and articles (Herranen 1977). The material used to study word order errors consisted of free written production by Finnish students. A total of 648 word order errors were examined; 67 per cent of the errors were considered to be due to L1 interference and only 7 per cent to the influence of English, while 22 per cent of the errors could be interpreted as being due to either of these two sources. The number of errors in the placement of adverbials was very high; a total of 69 per cent of all the errors fall into this

category. It was in this category that the Finnish influence was greatest (72 per cent of all errors). The second largest category was the ordering of the noun modifiers (16 per cent) and the third the relative order of the subject and the predicate verb (11 per cent). The same material was used to study errors in the tenses and aspect. About 30 per cent of the errors concerned the use of the progressive, 15 per cent the perfect tense, and a total of 55 per cent the sequence of tenses in a larger textual entity. It was also found that the percentage of errors in the use of the progressive sank with progress in studies, while the other two percentages rose respectively. In the students' translations errors in the use of the progressive amounted to 64.5 per cent of all the errors, those in the use of the perfect tense to 22.5 per cent, and those in the sequence of tenses to 13 per cent. In translations the relative proportion of perfect tense errors decreased with progress in studies. In most cases it was rather difficult to find a direct source for the errors, although interference from L1 was often seen as the most obvious reason. Some errors in the use of the perfect tense were seen as due to an L3 influence (Swedish).

The analysis of the article errors was divided into two parts: first, the article errors in students' free production were analysed, and second, the material collected in this way was used to test the conclusions drawn from the initial analysis. The total number of errors was 325 in the first part and 724 in the second. A hierarchy of difficulty was established on the basis of the tests, and it was discovered, that the most difficult fields of English article usage were the generic definite article with words in the singular, the generic definite article with words in the plural, and the generic use of uncountable nouns without an article. In both tests the largest sigle error categories were the unnecessary use of the definite article (20 %), the non-use of the definite article (15 %), and the unnecessary use of the indefinite article (12 %). The indefinite article was often used instead of the definite article (11 %) while the reverse error, the definite for the indefinite, was rare (1 %). A certain number of variables were studied as potential explanations for the correct or incorrect use of the articles. The length of the time that the students had studied English at school (either three or seven years) was not found to be significant; the same was true of whether the students were majoring in English or having English as a subsidiary. A certain number of the errors were clearly due to interference from Finnish but the greatest

reason for article errors was seen to be teaching: Finnish teachers of English are themselves not able to use the articles correctly, and the non-existence of clearly formulated rules makes it impossible to teach the correct use. Longer stay in an English-speaking country seemed to result in an increase in the number of article errors.[1]

In addition to the errors in university students' English, an analysis has been made of the errors in compositions by high school students who were studying English as L3 (the 'short' three-year course). In this study (Ahonen and Mottönen 1977) a total of 2,925 errors were analysed: 33 % were in the noun phrase, 26 % in the verb phrase, 26 % were spelling errors, and 5 % word order errors. About one-half of the errors in the NP were article errors. Nearly one-half of the errors in the VP were errors in the use of the tenses.

The error material collected for the project has also been used for a study (Rasänen 1976) of the attitudes held towards the acceptability of language material and towards errors by native speakers of English working as university teachers of English in Finland. The tests were devised mainly in accordance with the elicitation method developed by Quirk and Svartvik (1966), who themselves express grave doubts about the validity of tests of this kind. The study showed that teachers who had been working in Finland for a short time only and teachers who had taught English for a long time took a more liberal attitude towards errors than teachers who had held their posts for a few years. This last group also held the strictest attitude towards acceptability. A marked difference was noticed in attitudes between teachers who taught both language and literature and teachers who taught language only: the former group was clearly stricter than the latter.

The contrastive and error analysis has been supplemented by a number of textbook analyses: the teaching of the English tenses has been examined

[1] This somewhat contradictory finding can obviously be explained by the fact that the superficial rule structure given by school teaching collapses after exposure to English in natural settings, and it then takes a relatively long time before the student is able to acquire the 'correct' rules. This finding seems to support the distinction between learning and acquisition made by Krashen (1977), the article rules being typically such as can be acquired only.

in the *Start* and *Say It in English* course materials (Asplund 1976); certain important aspects of English grammar have been studied in the Finnish and Swedish versions of *Start* (The course was originally produced in Sweden and translated into Finnish), and the results show convincingly that a course written for Swedes is not very good for the purposes of Finns because the learning problems are highly different, at least at an elementary stage (Tiainen 1976).

The majority of the studies that are being continued are still purely grammatical: these include the basic sentence structure in Finnish and English, word order, object complementation, infinitive complementation, participles as modifiers, uses of the personal pronouns, modal auxiliaries and their Finnish equivalents, the Finnish conditional and its English equivalents, apposition, the equivalents of certain English prepositions in Finnish, reporting, and existential sentences. There are studies which are more clearly semantic, such as definiteness/indefiniteness, the agent, reflexiveness, cause and effect, commands and requests, and sense perception. A study of nominalization covers both syntactic/semantic and lexical problems. In the lexical area, the studies undertaken include the effects of the countable/uncountable concept, nominal compounds, verbs of movement, adjective-and-noun collocations, and phrasal verbs. Some lexical studies are related to school curricula: the problems to be studied include the distribution of lexical material in terms of time and the teaching of conventional idioms and collocations.

A wide variety of error analysis and learning strategy studies have been started on the basis of material collected from the sixth grade of the comprehensive school (the fourth year of English).

In collaboration with the Jyväskylä project, the Department of English at the University of Oulu has collected a corpus of material from non-fiction, and this is being used as a basis for a great number of theses of a contrastive nature. In Jyväskylä a certain number of contrastive analyses have been undertaken in the language of certain fields such as business, advertizing, and biology. Translations are used to study certain cross-cultural problems, and school curricula are studied to see how much attention has been paid to differences in social relationships and interaction in Finland and English-speaking countries.

Phonological and phonetic studies. - The early phonological studies undertaken by the project have been clearly different from the traditional

framework of CA. A mere parallel presentation of the equivalent phonetic and phonological phenomena of the two languages was considered insufficient and therefore, from the very beginning, it was supplemented by research on the effects of the clash between the two systems. Experimental research has concentrated on tests to measure the digressions of the Finns' English speech from that of the native speakers, the ability of Finns to recognize English words and phrases, and the comprehension of a Finnish variety of English by native speakers of English. What is contrastive in this work is the test design and the interpretation of the results.

The ultimate problem of contrastive phonetics is the establishment of the similarities and differences between the communication chains of the two languages. These consist of two kinds of factors: similarities and differences in the way in which linguistic information is turned into physical speech, and those in the way in which the characteristics of physical speech are processed in reception. The research carried out so far has already indicated that a great many of the problems in the production and reception of speech are basically due to this system of identification cues, which exists between the conscious phonological level and concrete physical speech and is for the most part unconscious.

The problem of equivalence is central to phonetic studies. It is only seldom that the problem is so simple that it can be solved by simply comparing the 'same' sounds in the two languages, eg. the s-sounds or the stops. The elements mixed with each other may sometimes be quite unexpected: for instance, a Finn may meet difficulties in learning the fortis/lenis distinction of the English consonants as a result of long/short distinction of the Finnish vowels; what a Finn considers to be clarity in his pronunciation of English may be regarded as foreign accent and lack of fluency by a native speaker of the language; errors in the pronunciation of certain sounds may be heard as changes in the stress pattern of the words, and so on. It is self-evident that the source of such problems and confusions must be found before teaching materials can be adjusted accordingly and before the real reasons for errors can be dealt with in teaching situations. Too much remedial teaching is simply repetition of the material which did not bring about the required results, mainly because there is not enough information about the real causes; in most cases, traditional contrastive analyses have been insufficient to give explanations even in instances where the cause may be due to cross-language interference.

Most of the phonetic and phonological studies start from a threefold setup: when the errors made by a foreign language learner in speech are analysed and the sources of such errors are investigated, it is necessary (1) to analyse the phonetic and perceptual parameters of the L2 phenomenon; (2) to determine the way in which the learner's production differs from the target language model, ie. the production of a native speaker, and the way in which the language learner's perception (ie. the recognition of the phenomenon) and the correlates which he employs to reach that perception (phonetic cues) differ from those of the native speaker; and (3) to study the phenomena in the learner's L1 which cause such divergencies. What is studied, therefore, is not only 'pronunciation' but a complex of problems which extends far beyond the area of traditional pronunciation teaching, that is, the differences in the learner's L1 and L2 communication chains as a whole and the problems and confusions arising form the fact that the learner unconsciously resorts to L1 phenomena when producing L2 or when trying to understand L2.

The theoretical basis of the phonetic and phonological studies is either traditional taxonomic phonology and morphophonemics or more modern 'concrete phonology' (see Lehtonen 1977), but even in studies starting from the concrete-phonology basis (eg. in studies of stress and intonation) it is necessary to resort to various concepts of morphophonemics, syntax, and semantics. In addition, information about lexical, communicative, and pragmatic factors is often essential for an explanation of the problems.

In addition to native speakers of English, three groups of Finnish speakers of English are used as subjects for experiments: university students who are not majoring in English and who are considered to represent the product of English language teaching in Finnish secondary schools; university students who have reached the qualifications of the teacher of English; and, in some of the studies, students of Finnish comprehensive schools (from 9 to 16 years of age) who are taught English.

The majority of the phonetic studies are limited to certain specific phonetic phenomena such as the fortis/lenis distinction in English, which has been divided into several separate studies: English vowel reduction, production and perception of English word stress, consonant clusters at word boundaries, errors in the signalling of English word boundaries, sentence stress and sentence rhythm, fluency, juncture and hesitation pauses, acceptability of the Finnish variety of the pronuncia-

tion of English and the reliability and validity of the marking of pronunciation errors, various methodological problems in the research concerned with phonetic skills, and problems connected with oral reading.

Reports have so far been published on testing Finnish schoolchildren's learning of English consonants (Moisio and Valento 1976), English stops as produced by native and Finnish speakers (Suomi 1976), signalling of morpho-phonological boundaries by Finnish speakers of English (Lehtonen and Koponen 1977), and certain problems of fluency (Sajavaara and Lehtonen 1978; Lehtonen 1978). In addition, certain problems of methodology and objectives have been discussed by Lehtonen (1977). Lehtonen and Koponen (1977) concentrate on glottalization at word boundary, which is one of the typical errors in a Finn's English. Moisio and Valento (1976) test certain problems in Finnish schoolchildren's consonants on a rather traditional basis, while Suomi (1976) represents an approach where, in addition to the structural differences in the phonological systems of the two languages, concrete speech is analysed instrumentally as well; the published report is only one part of a larger analysis of the fortis/lenis opposition. Sajavaara and Lehtonen (1978) and Lehtonen (1978) are preliminary reports on the research centring around the problem of how fluency should and could be measured.

Moisio and Valento show in their work that the classical sound discrimination test (ie. a test in which the subject hears word triplets like *clothing - closing - closing* and is asked to decide which stimulus, if any, is different from the others) has little relevance as regards the testing of any foreign language skill. It actually happened in the tests that the control group children (ie. children who studied German as a foreign language) who had never in their life studied English, achieved higher scores in the English discrimination test than the children three years younger who had studied English. Thus the discrimination tests measured a skill which is somehow related to the auditory discrimination and to the maturation of the capability to abstract linguistically significant patterns from the process of auditory perception. The tests did not measure the ability to distinguish a certain phonological opposition in a given language. This view will be confirmed in the forthcoming work of R. Lammin-maki.

K. Suomi's work is focused on the problems involved in the production of English fortis and lenis plosives by native speakers of English and by two groups of Finnish students. The analyzed material consists of plosive oppositions only. The material has been phonetically analyzed and the

differences in the durations of various acoustic sound segments have been statistically tested; the differences in various parameters between phonological categories and between the three informant groups have been calculated and tested. It was found that the Finnish students of English tended to exaggerate the difference in the voicing of lenis and fortis plosives, whereas the subjects in the 'non-linguist' group very nearly failed to maintain the opposition in their production. Both groups of Finnish speakers seemed to transfer the durational patterns of their mother tongue into their English productions. Thus they substituted the durations of Finnish single/double vowel pattern for the durations of the English tense/lax opposition. The Finnish students also almost invariably failed to use the duration of the vowel to maintain the fortis/lenis opposition of the word final plosive. Suomi also includes a theoretical discussion of the physiological correlates of English fortis/lenis opposition in his study, as well as a discussion on the application of the markedness theory to the description of the opposition. A further study by him will include a more sophisticated physiological and acoustical analysis and also perceptual tests using synthesized stimuli.

The work of Suomi (1976) is one of three separate studies, all of which were carried out on a parallel basis. One of them is concerned with the problems of the English fortis/lenis distinction as a whole, one with the specific problems involved in the production of plosives, and one with the difficulties caused by English consonant production at the secondary level. Unfortunately, the reporting of the two studies has been delayed for several reasons.

The problems met by a Finn as regards the learning of the entire fortis/lenis opposition of English consonants are discussed by R. Hänninen (1978). In his study he analyzed instrumentally the durations of phonetic segments in words with either initial, medial or final fortis/lenis opposition. The opposition has been analyzed in three different contextual environments: in isolated words, in words included in word lists, and in words embedded in a meaningful sentence (eg. *The old man's decease/disease made everybody sad; He used to write/ride when he was youg*). The acoustical and statistical analyses also show that the detailed acoustical data on the production of English fortis/lenis plosives can be only partially applied to instances involving obstruents other than plosives and contexts other than isolated production or production in a nonsense sentence frame.

Hänninen also shows that the differences between the segmental durations in isolated words and in words included in word lists are negligible, whereas the durational pattern differs significantly in words that are embedded in a linguistically meaningful context. In addition, the relative deviation in the pronunciation of the students seems to be somewhat greater in a real sentence context than in isolated words or in words included in word lists.

In general, the timing of the consonant itself seems to be an additional source of pronunciation problems. This applies to both fricatives and affricates in all word positions. The entire set of physical parameters that is involved in the production of the opposition seems to be more difficult for a Finn to master than the set of cues for the plosives. However, the word final fortis/lenis consonants preceded by another consonant, turned out to be the most difficult instances (eg. *sauce/sass; posed post*), as Hänninen states: "It can be said without doubt that the Finnish group have here undergone a complete failure: in fact they have not succeeded in making any fortis/lenis distinction at all". All the parameters that are used to maintain the distinction are either lacking in the production of Finns, or are the opposite to those used as identification cues used by the native speakers.

The hypothesis suggesting that erroneous pronunciation is only a reflection of the problems involved in the perception of foreign speech was tested in the work of Hänninen by means of several identification tests. There were three different settings: (1) Finnish students identified words or sentences produced by native speakers of English, (2) Finnish students of English identified native stimuli and (3) native speakers of English identified isolated words or sentences produced by Finnish students. Each test item was pronounced by three informants. The results of the tests are startling: the Finnish students failed to identify most of the tested oppositions, and the English listeners, even though they were all lecturers at a Finnish university, were seldom able to identify correctly the English words pronounced by the students of either informant group. The test thus shows clearly that the pronunciation problems may have more serious consequences than just the foreign accent of the Finnish student: they can cause a severe communicative impediment, which may affect the listener's semantic interpretation of the message.

The more theoretical problems connected with the concepts of co-arti-

culation and vowel reduction are under discussion in the work of H. Heikkinen (1978). She has analyzed the acoustic quality of the unstressed second syllable vowel in English words and the influence upon it of the quality of the first syllable vowel. The contrastive phonetic approach, the analysis and comparison of the productions of native English speakers and Finnish students, yields some interesting results concerning the universal nature of co-articulation and vowel reduction. The study also reveals some of the reasons for the difficulties of a Finn to produce English word and sentence stress patterns in a phonetically correct way.

The results available at this stage have also been applied for language teaching purposes by Lehtonen, Sajavaara and May (1977). The textbook resembles, in some parts, traditional textbooks of phonetics but certain new ideas were also adopted. Spoken language is not seen as 'pronunciation', where the important elements to be taught are features like aspiration and positions of the tongue, but as interpersonal communication and behaviour, where even 'wrong' pronunciation is acceptable in certain contexts. The book will be supplemented by another volume which will consist of both written materials and audio, possibly even video, cassettes.

Discourse analysis. - The Finnish-English Contrastive Project has now entered a phase where a language user's communicative competence as a whole is the object of study, and attention is paid to all linguistic, psychological and sociological parameters that, together, make it possible for human beings to communicate with each other. For research of this kind we need information about how a Finn uses Finnish in communication and how he uses another language, and also how a Finn understands the speech of a native speaker. Information is also needed about various factors that make it possible to communicate the message. This kind of communicative contrastive analysis is possible only on the basis of natural speech, and for this purpose, the project has started collecting videotaped materials about various situations of language use. There are two types of approach that can be found among the pilot studies using the communicative, or pragmatic, perspective. One is the analysis of linguistic and paralinguistic behaviour of the speakers in varying communicative situations of non-interactive character (eg. the reading of texts of varying complexity or the free delivery of speech during various types of description tasks).[1] The

[1] For some preliminary results, see Sajavaara and Lehtonen (1978) and Lehtonen (1978).

other approach is the description of the communicative behaviour of native speakers and students - or schoolchildren - in different interactional situations.

In the first stage of this work, small-group interaction in seminar-like settings and classroom interaction have been chosen as primary targets, but some research has also been made on casual conversations (Ventola 1977). During the past two years, four studies have been started in this field, and three different interactional situations will be examined in them: (1) situations involving dyadic communication, eg. phone calls, (2) small group discussions where there are four or fewer participants and (3) classroom interaction. The materials from situations (2) and (3) are collected by means of videotaping.

The equipment used in the audiorecording of the group discussions makes possible the recording and analysis of simultaneous speaking turns (eg. simultaneous starts, feedback moves of the listeners, or completions). The chronemics of the discourse (ie. the use of the time axis as a functional element in the discourse) can be analyzed and described using a method, developed for the purpose, in which the speaking turns of each participant are transformed into a binary on/off signal and recorded on paper by means of a level recorder.[2]

[2]The methodology and objectives of this research will be discussed in a separate report (Lehtonen, Sajavaara and Korpimies 1978).

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